UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/558,886	02/16/2006	Hiroto Kobayashi	126192	6029

25944 7590 07/10/2009

OLIFF & BERRIDGE, PLC
P.O. BOX 320850
ALEXANDRIA, VA 22320-4850

EXAMINER	
FERGUSON, MICHAEL P	
ART UNIT	PAPER NUMBER
3679	

MAIL DATE	DELIVERY MODE
07/10/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/558,886	KOBAYASHI, HIROTO	
	Examiner	Art Unit	
	MICHAEL P. FERGUSON	3679	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 April 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) *4,5,11,12,15 and 16* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,6-10,13,14 and 17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *02 December 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *12/02/05,07/30/07*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Species 1, Figures 1 and 2, claim 1-3, 6-10, 13, 14 and 17, in the reply filed on April 29, 2009 is acknowledged. The traversal is on the ground(s) that the search of multiple species would not impose a serious burden on the examiner. This is not found persuasive because Species 1 and 2 comprise patentably distinct features which require the search of different subclasses due to the claimed structural differences between such species. Examining both species together would impose a serious burden on the examiner, as such would require the search of multiple patentably distinct features that otherwise would not have to be searched for, applying appropriate prior art rejections and having to consider and respond to attorney arguments regarding such multiple patentably distinct features and rejections.

The requirement is still deemed proper and is therefore made FINAL.

2. Claims 5, 6, 11, 12, 15 and 16 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on April 29, 2009.

Claim Objections

3. Claims 1, 6, 7, 9, 10, 13, 14 and 17 are objected to because of the following informalities:

Claim 1 (line 2) recites “wherein, at shaft”. It should recite --the connection device comprising, at shaft--.

Claim 1 (lines 3-4) recites “there are provided form-locking portions… other, one end”. It should recite --form-locking portions… other, wherein one end--.

Claim 1 (line 6) recites "the center axis". It should recite --a center axis of the shafts--.

Claim 1 (line 7) recites "the inner". It should recite --an inner--.

Claim 1 (line 9) recites "drive shaft side". It should recite --drive shaft--.

Claim 1 (line 10) recites “at the end portion”. It should recite --at an end portion--.

Claim 1 (line 11) recites “at said flange”. It should recite --in said flange--.

Claims 6, 9 and 10 (line 3) each recite “the contact portion". They should each recite --a contact portion--.

Claims 13, 14 and 17 (line 3) each recite “those shafts”. They should each recite --the shafts--.

For the purpose of examining the application, it is assumed that appropriate correction has been made.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-3, 6-10, 13, 14 and 17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 (lines 1-11) recites “A connection device for a tire-building drum for connecting a center shaft of the tire-building drum to a drive shaft… wherein at shaft

end of both shafts…there are provided form-locking portions… one end of a cylindrical member is disposed by screwing to a head portion of the drive shaft… a flange… is provided at the end portion of said drum center shaft". It is unclear as to whether a center shaft and a drive shaft have been positively claimed as elements of the claimed connection device, or whether such shafts have only been recited as intended use. Accordingly, one is unable to properly determine the metes and bounds of such claim. Claims 2, 3, 6-10, 13, 14 and 17 depend from claim 1 and are likewise rejected. For the purpose of examining the application, it is assumed that a center shaft for with a tire-building drum and a drive shaft have been positively claimed as elements of the claimed connection device.

6. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships which render the claim indefinite are as follows:

Claim 1 (lines 4-8) recites "one end of a cylindrical member is disposed by screwing to a head portion of the drive shaft, and a plurality of cam rollers rotatable around the center axis oriented in the radial direction are attached… on the inner circumferential surface of the other end of the cylindrical member". Claim 1 fails to clearly and positively claim any structural limitations which enable one to properly determine the functional relationship and structural engagement between the one end of the cylindrical member which is screwed to a head portion of the drive shaft and the

center shaft. Furthermore, claim 1 fails to clearly and positively claim any structural limitations which enable one to properly determine the functional relationship and structural engagement between the cam rollers and the center shaft.

Claim 1 (lines 9-12) recites “a flange pressed by the cam rollers… under a tightening displacement of the cylindrical member is provided at the end proton of said drum center shaft, and cutout portions are provided... for preventing interference of the cylindrical member with the cam rollers before said tightening displacement". Claim 1 fails to clearly and positively claim any structural limitations which enable one to properly determine what structurally constitutes such tightening displacement. Moreover, claim 1 fails to clearly and positively claim any structural limitations which enable one to properly determine relative to which other elements such displacement of the cylindrical member occurs, and when during assembly of the connection device and due to the structural engagement of which elements such displacement occurs.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1, 3, 6, 7, 10, 14 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Druschel et al. (US 2,862,728).

As to claim 1, as best understood, Druschel et al. disclose a connection device capable of use with a tire-building drum connecting a center shaft **17,10** capable of use

with the tire-building drum to a drive shaft **16,1,2,9** on a building machine body side, the connection device comprising, at shaft ends of both the shafts to be brought into contact with each other, form-locking portions **9,14** to be fitted with each other, wherein one end of a cylindrical member **6** is disposed by screwing to a head portion **7** of the drive shaft, and a plurality of cam rollers **3** rotatable around a center axis **4** of the shafts oriented in the radial direction are attached, with an interval in the circumferential direction, on an inner circumferential surface of the other end of the cylindrical member,

a flange **10** pressed by the cam rollers toward the drive shaft under a tightening displacement of the cylindrical member is provided at an end portion of the drum center shaft, and cutout portions are provided in the flange for preventing interference of the cylindrical member with the cam rollers before the tightening displacement (Figures 1-4).

As to claim 3, Druschel et al. disclose a connection device wherein a high-hardness metal plate is disposed at least at a portion of the flange **10** in contact with the cam rollers **3** (flange **10** is comprised of metal, metal material having a relatively higher hardness than plastic material; thus constituting a high-hardness metal plate; metal cross-hatching shown in Figure 3).

As to claims 6 and 10, Druschel et al. disclose a connection device wherein a surface contact is capable of being made between the drum center shaft **17,10** and the drive shaft **16,1,2,9** at each of the form-locking portion **9,14** and a contact portion around the form-locking portion (Figure 3).

As to claims 7, 14 and 17, Druschel et al. disclose a connection device wherein at a contact portion between the drum center shaft **17,10** and the drive shaft **16,1,2,9**, there is provided a relative-rotation restricting means **13,14** for the shafts (Figure 3).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 2, 8, 9 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Druschel et al.

As to claim 2, Druschel et al. disclose a connection device wherein the drive shaft **16,1,2,9** and the cylindrical member **6** are screwed with screws **7** (Figure 3). Druschel et al. do not disclose any structural or functional significance as to the specific cross-sectional shape of the screws. Druschel et al. fail to disclose a connection device wherein the drive shaft and the cylindrical member are screwed with trapezoidal screws.

The applicant is reminded that a change in the shape of a prior art device, wherein there is no structural or functional significance disclosed as to the specific shape of an element, is a design consideration within the skill of the art. In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966). Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the connection device disclosed by Druschel et al. wherein the drive shaft and the cylindrical member are screwed with trapezoidal screws as Druschel et al. do not

disclose any structural or functional significance as to the specific cross-sectional shape of the screws, and as such change is shape is a design consideration within the skill of the art which would yield expected and predictable results.

As to claim 8, Druschel et al. disclose a connection device wherein a high-hardness metal plate is disposed at least at a portion of the flange **10** in contact with the cam rollers **3** (flange **10** is comprised of metal, metal material having a relatively higher hardness than plastic material; thus constituting a high-hardness metal plate; metal cross-hatching shown in Figure 3).

As to claim 9, Druschel et al. disclose a connection device wherein a surface contact is capable of being made between the drum center shaft **17,10** and the drive shaft **16,1,2,9** at each of the form-locking portion **9,14** and a contact portion around the form-locking portion (Figure 3).

As to claim 13, Druschel et al. disclose a connection device wherein at a contact portion between the drum center shaft **17,10** and the drive shaft **16,1,2,9**, there is provided a relative-rotation restricting means **13,14** for the shafts (Figure 3).

Conclusion

The prior art made of record and not relied upon is considered pertinent to the applicant's disclosure. The following patents show the state of the art with respect to shaft connection devices:

Skeel (US 2,007,897), Barnes (US 2,365,327) and Loker (US 4,244,456) are cited for pertaining to shaft connection devices comprising a first and second shaft, a cylindrical member and a plurality of cam rollers.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL P. FERGUSON whose telephone number is (571)272-7081. The examiner can normally be reached on M-F (6:30am-3:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel P. Stodola can be reached on (571)272-7087. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MPF
07/09/09

/Michael P. Ferguson/
Primary Examiner, Art Unit 3679